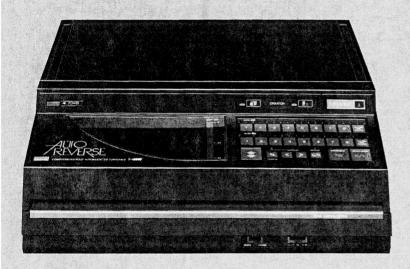
# SERVICE MANUAL

COMPUTERIZED FULLY AUTOMATIC DD TURNTABLE

# SANSUI P-M900



### NOTE

P-M900 is additional model which external appearances are different from those of P-M90.

This manual contains OTHER PARTS LIST, PACKING LIST and ACCESSORY LIST in which changed parts are printed with bold-face.

For other parts list, refer to P-M90 service manual previously issued.



SANSUI ELECTRIC CO., LTD.

#### SPECIFICATIONS

Type	Direct-drive turntable
Rated speeds	
Platter	76 mm (3") diameter,
	0.37 kg weight
Motor	Brushless & Coreless
	DC (FG-Servo)
Wow/flutter	0.08% (WRMS)
Signal-to-noise ratio	Better than 72 dB (DIN-B)
Complete and the first that	Better than 60 dB (IEC-B)
Tonearm	Dynamically-balanced straight
	type
Effective tonearm length	70 mm (2-3/4")
Tonearm	Better than 60 dB (IEC-B) Dynamically-balanced straight type

Cartridge

...... Dual Magnet type

Output voltage..... 2.5 mV

(1,000 Hz, 35.4 mm/sec)

Correct load impedance .... 47 kohms Frequency response...... 10 ~ 20,000 Hz

Stylus...... 0.6 mil diamond stylus (SN-909 replacement stylus)

Power voltage ...... 110 ~ 120V/220 ~ 240V

(50/60 Hz)

For U.S.A. and Canada ...... 120V (60 Hz)

Power consumption ...... 25W

120 mm (4-3/4") H 355 mm (14") D

8.6 kg (19.0 lbs.) packed

\* Design and specifications subject to change without notice for im

provements.

\* Due to local laws and regulations, this unit sold in some areas are no equipped with variable voltage selectors.

# 1. PACKING LIST

Parts No.	Stock No.	Description	-
1		Accessories (Sound Absober)	
2		Polyethlen Bag	
3		Turntable	
4	47859600	Vinyl Bag	
5	13285400	Corrugated Board	
6-1	13287710	Styrofoam Packing (Left Side)	
6-2	13287810	Styrofoam Packing (Right Side)	
7		Tag	
8	00423400	Transit Screw, 4X16 Binding	
9	47942100	Carton Case	
10		Bottom Packing	

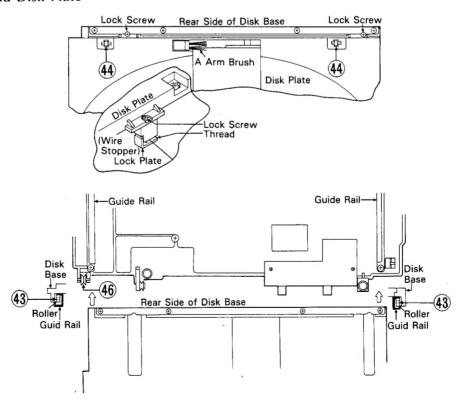
# 

# 2. ACCESSORY LIST

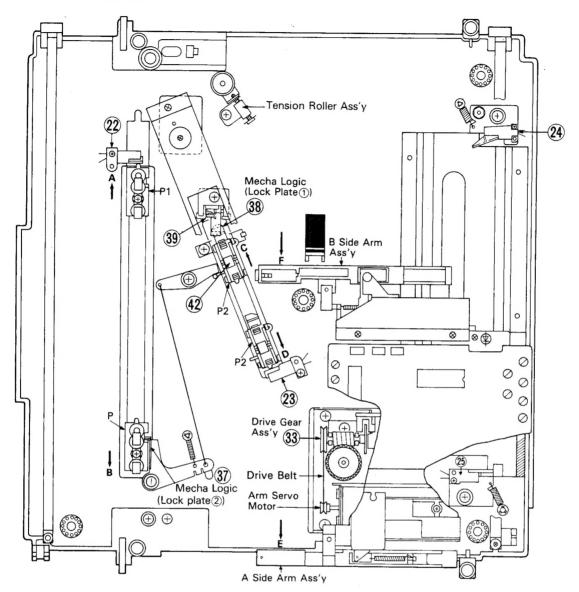
Stock No.	Description
48181600	2P Plug Cord
46980600	Operating Instruction
	Accessories (Sound Absover)
(13308100	Wooden Board (Front Side)
13308000	Wooden Board (Rear Side)
13307900	Pipe
13145100	Insulator
46971900	Operating Sheet

# 3. OTHER PARTS

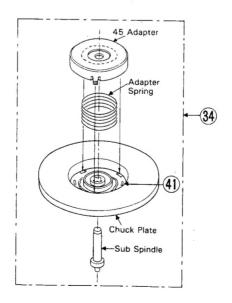
## 3-1. Disk Base and Disk Plate



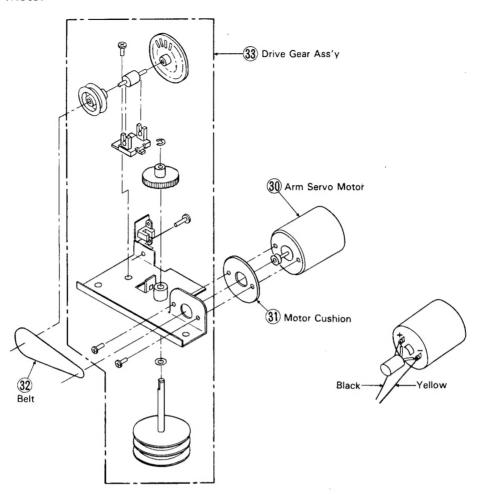
# 3-4. Top View of Main Chassis



# 3-5. Chuck Plate Ass'y



# 3-6. Arm Servo Motor



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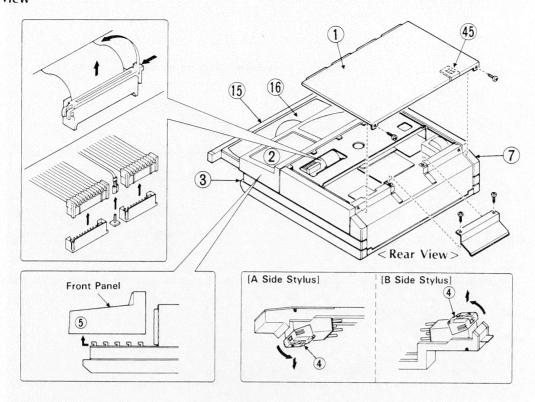
Parts No.	Stock No.	Description
1	13290020	Top Plate
2	13294840	Key Board Ass'y
		<xx,csa,eu,bs, as=""></xx,csa,eu,bs,>
	13310530	Key Board Ass'y <ul></ul>
3	13273800	Front Cover
4	13303300	Stylus SN-909,
		for A arm and B arm
5	47746500	Front Panel Ass'y
		<xx,csa,eu,bs,as></xx,csa,eu,bs,as>
	47942700	Front Panel Ass'y <ul></ul>
6 <b>7</b>	13291200	Side Panel, right side
7	13291100	Side Panel, left side
<b>∆</b> 8	15014901	Power Transformer < XX>
$\triangle$	15014902	Power Transformer < UL, CSA >
$\triangle$	15014905	Power Transformer < EU, BS, AS >
<b>∆</b> 9	46413200	Power Supply Cord < XX >
A 8 A 9 A A A A A A A A A A A A A A A A A A	38004700	Power Supply Cord <ul></ul>
$\triangle$	38004500	Power Supply Cord <eu></eu>
$\triangle$	38004300	Power Supply Cord <bs></bs>
$\triangle$	07204200	Power Supply Cord <as></as>
$\triangle$	48187400	Power Supply Cord < CSA>
<b>1</b> 0 <b>1</b> 0	46941300	Switch for Power Supply
11	13278800	Cord Cover
12	13234400	Output Cord with Pin Plug <xx,csa,eu,bs,as></xx,csa,eu,bs,as>
	13234500	Output Cord with Pin Plug < UL>
<b>1</b> 3 <b>1</b> 3	46413900	Push SW., POWER
14	47745700	Knob, POWER Switch
15	18096400	Disk Base Ass'y
16	18096600	Disk Plate Ass'y
17	13274000	Pick-up Brush Á
18	13274100	Pick-up Brush B

Parts No.	Stock No.	Description
19	18083900	DD Motor for Disk Driver
		(with S-0260)
20	13260300	T.T. Sheet
21	13260410	Lock Bush
22	46926900	Micro Switch, disk open
23	46926900	Micro Switch, chuck ON
24	46925200	Micro Switch, B arm reset
25	46925200	Micro Switch, A arm reset
26	18095700	A Side Arm Ass'y
27	13284410	A Side Lifter Ass'y with Plunger A
28	18095400	B Side Arm Ass'y
29	13284510	B Side Lifter Ass'y with Plunger
		B,C
30	46935700	Arm Servo Motor
31	13288900	Motor Cushion
32	13281100	Drive Belt
33	18085600	Drive Gear Ass'y
34	18086300	Chuck Plate Ass'y
35	13289100	Switch Case
36	13266710	Wire Stopper (L plate)
		(Refer Fig:8-6 on page 16)
37	13265300	Lock Plate, ②
38	13265010	Lock Plate, ①
39	13265700	Hook Arm Spring
40	13281000	Joint Bar
41	13279100	Guide Ring
42	13264800	Thrust
43	13265400	Side Roller Ass'y
45	13289000	Power Supply Switch Knob
46	13274500	V Roller

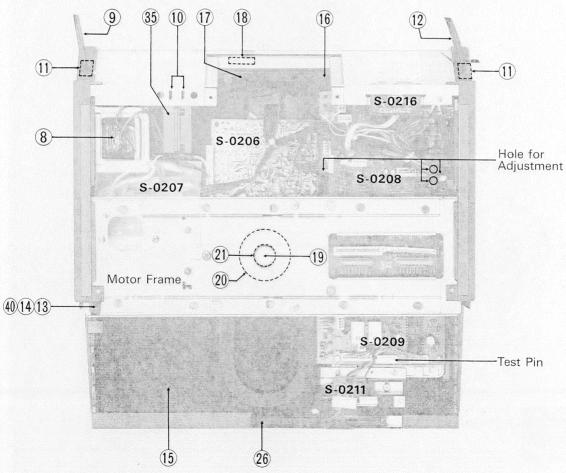
Note: Although Parts (No.37 ~ 46) are used in model P-M90, not listed on Service Manual of P-M90.

However added as Service Parts for the reference.

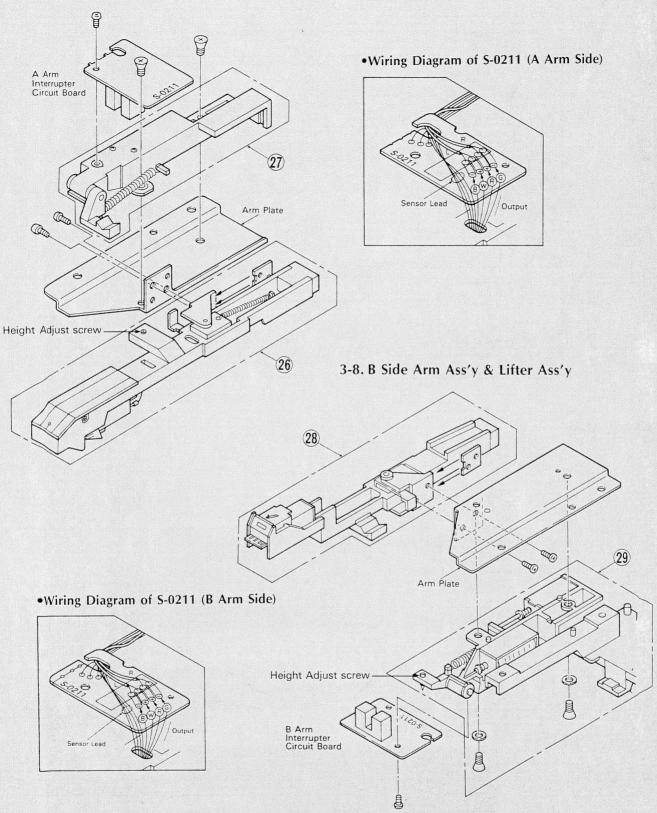
# 3-2. Front View



# 3-3. Top View



# 3-7. A Side Arm Ass'y & Lifter Ass'y





SANSUI ELECTRIC CO., LTD.: SANSUI ELECTRONICS CORPORATION:

SANSUI ELECTRONICS (U.K.) LTD. SANSUI ELECTRONICS G.M.B.H.:

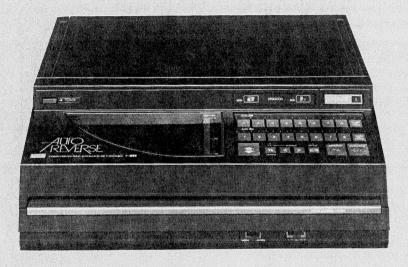
14-1, Izumi 2-chome, Suginami-ku. Tokyo 168 Japan
PHONE: (03) 324-8891/TELEX: 232-2076 (International Division)
1250 Valley Brook Ave. Lyndhurst, N.J. 07071 U.S.A.
17150 South Margay Ave. Carson, California 90746 U.S.A.
3036 Koapaka Street. Honolulu, Hawaii 96819 U.S.A.
Unit 10A, Lyon Industrial Estate. Rockware Avenue, Greenford, Middx UB6, OAA, England
Pau Ehrich Strasse 8, 6074 Rodermark 2, West Germany

# SERVICE MANUAL

COMPUTERIZED FULLY AUTOMATIC DD TURNTABLE

# SANSUI P-M90

(Silver & Black Model)



### CAUTION

- 1. Parts identified by the A symbol on the schematic diagram and the parts list are critical for safety. Use only replacement parts that have critical characteristics recommended by the manufacturer.
- 2. Make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the appliance to the customer.

#### SPECIFICATIONS

Type..... Direct-drive turntable Rated speeds...... 33-1/3, 45 rpm 0.37 kg weight Motor ...... Coreless and Brushless DC/FG Wow/flutter ...... 0.08% (WRMS) Signal-to-noise ratio ....... Better than 72 dB (DIN-B) Better than 60 dB (IEC-B)

...... 70 mm (2-3/4")

Cartridge

Effective tonearm length

Type...... Dual Magnet type Output voltage..... 2.5 mV (1,000 Hz, 35.4 mm/sec)

Correct load impedance

...... 47 kohms Frequency response...... 10 ~ 20,000 Hz Stylus ...... 0.6 mil diamond stylus (SN-909 replacement stylus)

Others **Power voltage** ...... 110 ~ 120/220 ~ 240V (50/60 Hz)

For U.S.A. and Canada

...... 120V (60 Hz)

Power consumption ...... 25W

120 mm (4-3/4") H 355 mm (14") D 7.2 kg (15.9 lbs.) net 8.6 kg (19.0 lbs.) packed

\* Design and specifications subject to change without notice for improvements.

In order to simplify the explanation illustrations may sometimes differ from

the originals.



SANSUI ELECTRIC CO., LTD.

# **CAUTION**

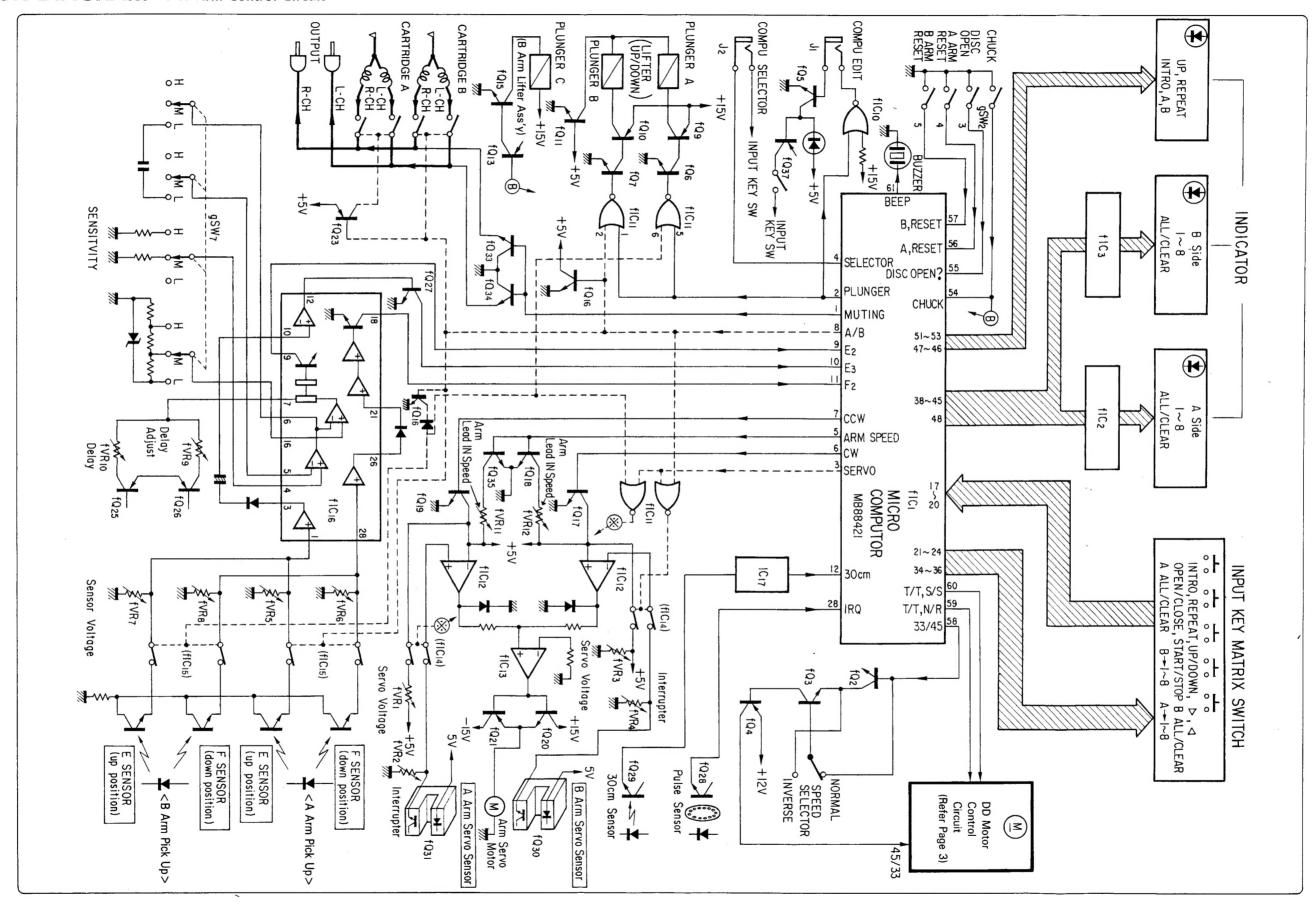
1. The symbols, UL, CSA, SA, BS, UK, EU, AS and XX on the parts list and the schematic diagram mean followings respectively.

- Some printed circuit boards are not supplied as the assembled.
  To separate these in this service manual, the stock No's are not indicated at the ends of the board names. However, the individual parts on the circuit boards are provided by orders.
- 3. Since some of capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors & resistors, which was issued on February 1983.
- 4. Abbreviations in this service manual are as follows.

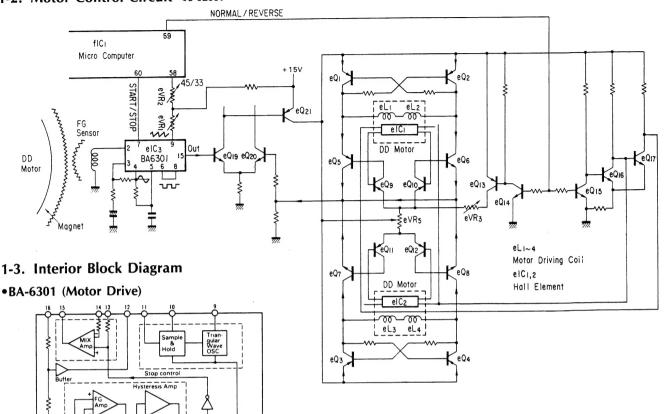
•Abb	reviations List	
C.R.	: Carbon Resistor	E.B.L. : Low Leak Bi-Polar
S.R.	: Solid Resistor	Electrolytic Capacitor
Ce.R.	: Cement Resistor	Ta.C.: Tantalum Capacitor
M.R.	: Metal Film Resistor	F.C. : Film Capacitor
F.R.	: Fusing Resistor	M.P. : Metalized Paper Capacitor
N.I.R.	: Non-Inflammable Resistor	P.C. : Polystyrene Capacitor
A.R.	: Array Resistor	G.C. : Gimmic Capacitor
C.C.	: Ceramic Capacitor	A.C. : Array Capacitor
C.T.	: Ceramic Capacitor,	V.R. : Variable Resistor
	Temoerature Compensation	S.V.R. : Semi Variable Resistor
E.C.	: Electrolytic Capacitor	SW. : Switch
E.L.	: Low Leak Electrolytic	Chip R.: Chip Resistor
	Capacitor	Chip C.: Chip Capacitor
E.B.	: Bi-Polar Electrolytic	
	Capacitor	

1

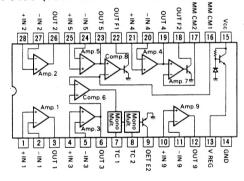
# 1. BLOCK DIAGRAM 1-1. Arm Control Circuit



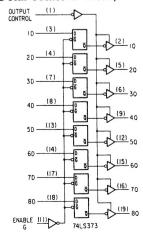
#### 1-2. Motor Control Circuit < S-0206>

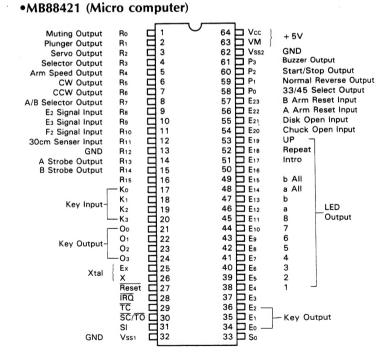


#### •BA-6150 (Tone Arm Servo Control)



#### •74LS373 (Octal 3state D-latch)





# 2. MAIN CIRCUIT FUNCTIONS

#### 1. Pulse sensor

In the microcomputer, various motor speeds are stored, which are suitable for the reset positions and the lead-out positions of 30cm, 25cm and 17cm size record disk. The arm is moved down in combination of signals detected by the 30cm disk sensor, 25cm and 17cm disk detection signals (E<sub>3</sub>) detected by the E sensor, and signals detected by the pulse sensors corresponding to disk sizes.

#### 2. 30cm disk selecting sensor

The position of the arm on the arm rest is located near the lead-in position of a 30cm disk. Therefore, a separate sensor is arranged to securely select a 30cm disk, without use of the signal  $(E_3)$  detected by the E sensor.

#### 3. E, F sensor

The signals detected by the E, F sensor are divided into three signals  $E_2$ ,  $E_3$ , and  $F_2$  through appropriate circuits.

- E<sub>2</sub> signal ..... indicates the number of counted musics, which is necessary to move down the tone arm onto the start of a desired music during the automatic music selection operation.
- E<sub>3</sub> signal ..... indicates the presence or absence of a 25cm or 17cm size disk.
- F<sub>2</sub> signal ..... indicates the detection of a music intermission during automatic music selection operation (tracing operation) and detection of the end of the last music. The arm is lifted up in combination of this F<sub>2</sub> signal and the pulse sensor signals.

### 4. Delay circuit

Since the E sensor is located about 3mm ahead of the stylus tip, it is necessary to delay the signal detected by the E sensor electrically. By adjusting this circuit, it is possible to eliminate the signal detection error caused by mismatching of the mechanism operation.

# 5. Music selection sensitivity switching circuit

The signals  $E_2$ ,  $F_2$  are converted into three different stages in order to perform an accurate automatic music selection operation.

#### 6. CHUCK switch (gSW<sub>2</sub>)

This switch detects that a record disk is perfectly mounted.

## 7. DISK OPEN switch (gSW<sub>3</sub>)

This switch detects that the disk plate is pulled out perfectly.

## 8. A, B ARM RESET switches (gSW<sub>4</sub>, gSW<sub>5</sub>)

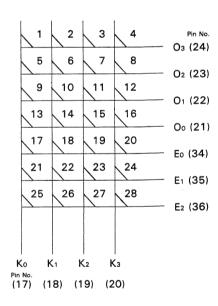
These switches detect that the A, B arms are reset, respectively.

#### 9. Muting operation timing

- During the automatic disk selection operation and the manual operation, the muting is off when the lifter is down but on when the lifter is up.
- When the stylus goes down onto a music intermission interval during the automatic music selection operation, the muting is off 1.7 secs after the stylus begins to go down. Further, when the stylus goes down onto a modulated groove near the end of the preceding music, the muting is off the instant the succeeding music intermission is detected.

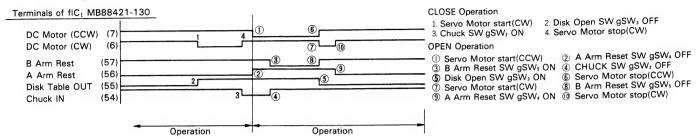
## •Input Key Matrix of Microcomputor IC MB88421

NO.	Key Name	Key Matrix	NO.	Key Name	Key Matrix	NO.	Key Name	Key Matrix
1	A NO.1	Ko O3	11	B NO.3	K2 O1	21	EJECT	Ko Eı
2	A NO.2	K1 O3	12	B NO.4	Кз От	22	◁	Kı Eı
3	A NO.3	K2 O3	13	B NO.5	Ko Oo	23	$\triangleright$	K:2 E:
4	A NO.4	K3 O3	14	B NO.6	Kı Oo	24	PAUSE	K3 E1
5	A NO.5	Ko O2	15	B NO.7	K2 O0	25	INTRO	Ko E2
6	A NO.6	K1 02	16	B NO.8	K3 O0	26	REPEAT	Kı E2
7	A NO.7	K2 O2	17	A ALL CLEAR	Ko Eo	27		
8	A NO.8	K3 O2	18	B ALL CLEAR	Kı E∘	28		
9	B NO.1	K₀ O₁	19	s/s	K2 E0	29		
10	B NO.2	Kı Oı	20			30		

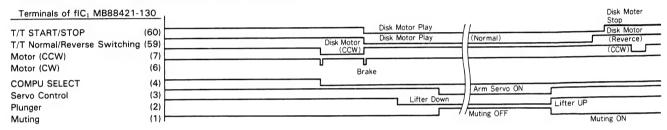


# 3. MAIN OPERATION TIMING CHART

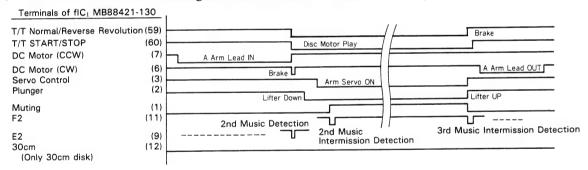
## 3-1. Loading Timing



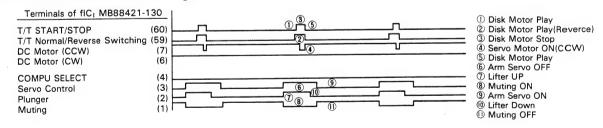
## 3-2. 30cm Disk Selection Lead-in, End Timing



# 3-3. 2nd Music Selection Timing on 30cm Disk of A Side



# 3-4. ALL INTRO SKIP Timing



# 4. ADJUSTMENT

# A. Preparation

- 1. Remove the top plate (No.1 in Part list excluding circuit boards). See "How to replace the main parts" on page 16.
- 2. Remove only the key board from the front panel, and then connect three connectors extending from the key board to the S-0208 computer board.
- 3. Since the TP pins of S-0209 board may disappear under the motor frame when the arm moves, connect some wires to the TP pins necessary for adjustment. (See Fig. 4-1)
- 4. Turn on the interlock switch in accordance with the following procedure:
  - Remove two small screws for mounting the interlock switch.
  - 2) Roll up an appropriately sized paper as shown, insert the rolled paper into the contact portion of the microswitches, and then fixed it by an adhesive tape.

#### **B.** Caution

- 1. The A-arm and B-arm are mechanically linked with each other. Further, the reset position of A-arm corresponds to the lead-out position of B-arm.

  Therefore, it is possible to know the B-arm position on the
- basis of the A-arm position. However, positively depress each key ALL a, ALL b, ⟨ ∫ , and ∑ .
  2. The adjusting control knob (variable resistor) of S-0209 may disappear under the motor frame as the arm moves.
- Therefore, adjust it through an adjusting aperture formed in S-0208. (See Fig. 4-3)

  3. In case the operation keys are inoperative, turn off the main
- In case the operation keys are inoperative, turn off the main power switch and then turn on it again before depressing the operation keys.
- 4. Perform the adjustment in accordance with the determined procedure.

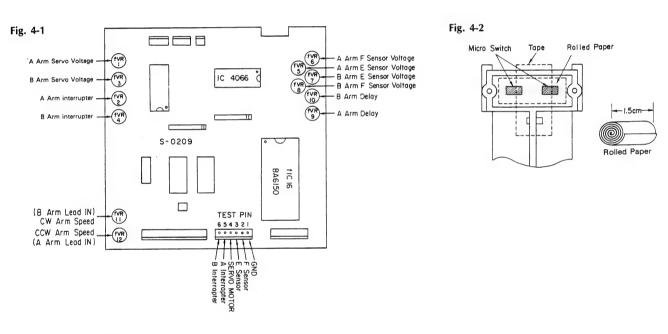
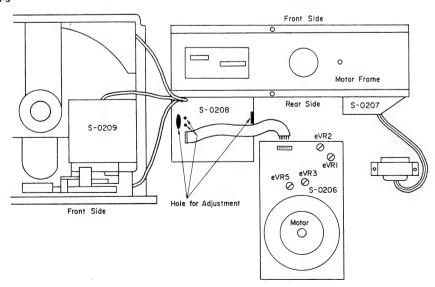


Fig. 4-3



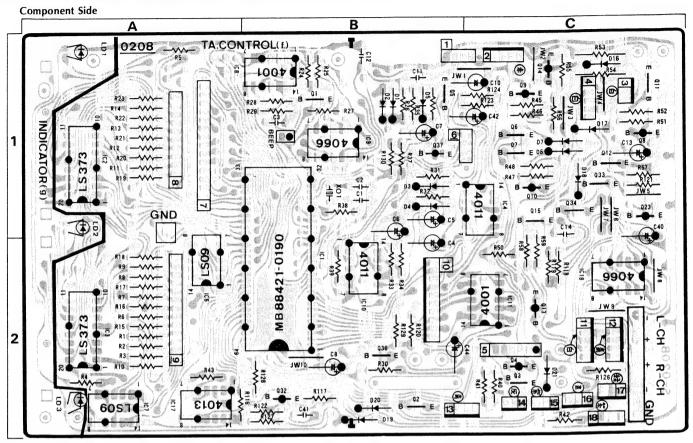
# •Adjustment List (See Figs. 4-1 and 4-3 for points to be checked and adjusted)

	Adjustment Procedure	Checked Position	Adjusted Parts	Adjustment Contents	Adjusting Conditions
1	A-arm interrupter voltage adjustment	Between S-0209 TP5 and GND (fQ31 emitter) DC voltmeter	fVR2	2~2.5V	Without any record disk.     Stop DD motor.     Bring A-arm near lead-out position (B-arm read-in position) by the hand.     Adjust the voltage when A- or B-arm is moved to its extreme outside
2	B-arm interrupter voltage adjustment	Between S-0209 TP6 and GND DC voltmeter	fVR4	2~2.5V	position by the hand.  DISK  B Arm  DISK
3	A-arm servo voltage adjustment	Between S-0209 TP4 and GND (on the positive side of arm servomotor) DC voltmeter	fVR1	-1V (It is preferable that the arm moves about 0.5mm toward the inside when lifter is down.)	1. Set a 30cm disk. 2. Stop DD motor. 3. Bring A-arm near lead-out position or B-arm near lead-in position by the hand. 4. Set lifter down by the hand.
4	B-arm servo voltage adjustment	Between S-0209 TP4 and GND (on the positive side of arm servomotor) DC voltmeter	fVR3	+1V (It is preferable that the arm moves about 0.5mm toward the inside when lifter is down.)	
5	A-arm speed adjustment	Time interval from when A-arm starts to when it stops. (A time device measurable up to seconds).	fVR11	4 secs. (The speed increases when fVR11 is rotated clockwise.)	1. Set a 30cm disk. 2. Stop DD motor. 3. Move A- or B-arm by use of 区, 区 key. 4. Check that A-arm moves from leadout position to reset position with ALL a key kept depressed.
6	B-arm speed adjustment	Time interval from when B- arm starts to when it stops. (A time device measurable up to seconds).	fVR12	4 secs. (The speed increases when fVR12 is rotated clockwise.)	
7	A-arm height adjustment	Measure the height between disk surface and E, F sensor with a rule.	Height adjusting screw (See 7-5 on page 15).	Adjust the distance between record disk and sensor to 6.5 ~ 7mm.  Cartridge  E, F sensor  10cm	Set a 30cm disk.     Stop DD motor.     Move the arm to a position 10 away from the center of the disk by the hand.     Keep lifter in UP state.
8	B-arm height adjustment	Measure the height between disk surface and E, F sensor with a rule.	Height adjusting screw (See 7-6 on page 15).	Adjust the distance between record disk and sensor to 6.5~7mm. The distance between the disk bisecting plane perpendicular to the disk axis and sensor is to be adjusted to 7~7.5mm as shown below.	1. Set a 30cm disk. 2. Stop DD motor. 3. Move B-arm to reset position by the hand. 4. Keep lifter in UP state. 5. The adjusting screw appears, if the main power switch is turned off when the disk base is pulled outward to its extreme position by depressing OPEN key without setting any record disk.
9	A-arm E-sensor sensitivity adjustment	Between S-0209 TP3 and GND (flC16 Pin3) DC voltmeter	fVR5	2.8V±0.1V	Set a 30cm disk having no cut grooves.     Stop DD motor.     Move the arm to a position about 10cm away from the disk center by the hand. Since the adjusting control the big section.
10	A-arm F-sensor sensitivity adjustment	Between S-0209 TP2 and GND (fIC16 Pin26) DC voltmeter	fVR6	2.5V±0.1V	knob is not rotatable at this position, move the arm to the lead-in position only while rotating the adjusting control knob.  4. Adjust E sensor with the arm kept in UP state and F sensor with the arm kept in DOWN state.
11	B-arm E-sensor sensitivity adjustment	Between S-0209 TP3 and GND (fIC16 Pin3) DC voltmeter	fVR7	2.8V±0.1V	Set a 30cm disk having no cut groovs.     Stop DD motor.     Move the arm to a position about 10cm away from the disk center by the hand. Since the adjusting control knob is not rotatable at this position,
12	B-arm F-sensor sensitivity adjustment	Between S-0209 TP2 and GND (fIC16 Pin26) DC voltmeter	fVR8	2.5V±0.1V	move the arm to the lead-in position only while rotating the adjusting control knob.  4. Adjust E sensor with the arm kept in UP state and F sensor with the arm kept in DOWN state.

	Adjustment Procedure	Checked Position	Adjusted Parts	Adjustment Contents	Adjusting Conditions
13	A-arm E, F sensor lateral-direction adjustment (Perform this adjustment only where A-arm is in a bad condition even after E, F sensor sensitivity adjustment (Item 11 and 12) and E <sub>2</sub> signal-ready adjustment (Items 15 and 16) have been achieved.)		E, F sensor adjustment screw ide Cartrige ter Side	1. Start music reproduction by selecting a music having a short music intermission interval between two modulated grooves.  2. Adjust the arm so that the stylus comes down onto a position a little ahead of the short music intermission interval and an L-level voltage may be generated the instant the stylus moves across the short music intermission interval.  3. Be sure that the muting is off (music reproduction starts) beginning from the start of the selected music.  4. In the case of the B-arm, it is impossible to see the record disk surface. Therefore, select the same music as in the A-arm	Set a 30cm disk having a short music intermission interval.     Set the sensitivity selector switch to H.     Rotate A- or B-arm E, F sensor adjusting screw counterclockwise to its extreme position to move the sensor at a position the nearest to the center of the disk.     Rotate delay adjusting control knob (fVR9 or fVR10) counterclockwise (MIN) to its extreme position.
14	B-arm E, F sensor lateral-direction adjustment (Perform this adjustment only where A-arm is in a bad condition even after E, F sensor sensitivity adjustment (Items 11 and 12) and E <sub>2</sub> signal-ready adjustment (Item 15 and 16) have been achieved.)		ter Side	and start the music reproduction. The same adjustment as in the A-arm should be made after UP/DOWN indicator light goes off.  Cartridge  Selected music  4.60  Music play	Record disk  Short intermission  H level, Pin 18 output voltage  No sound reproduction
15	A-arm E <sub>2</sub> signal delay adjustment	Stylus-down position during automatic music selection operation	fVR9	Repeatedly reproduce a music having a short music intermission interval between two modulated glooves by leading-in the arm onto a position a little ahead of the short music intermission interval.	Set a 30cm disk having a short music intermission interval.     Set the sensitivity selector switch to H.
16	B-arm E <sub>2</sub> signal delay adjustment	Stylus-down position during automatic music selection operation	fVR10	<ol> <li>Check that when the stylus goes down onto a position ahead of the short music intermission interval, the muting operation is off about 4-6 secs after the stylus tip is brought into contact with the disk.</li> <li>In the case of the B-arm, it is impossible to see the record disk surface. Therefore, select the same music as in the A-arm and start the music reproduction. Be sure that the muting is off about 4-6 secs after the UP/DOWN indicator light goes off.</li> </ol>	
17	A-arm lead-in adjustment  B-arm lead-in adjustment	Bottom Plate - A A	d IN . Screw	Lead-in the arm onto a 30cm disk during automatic disk selection operation and adjust the arm so that the stylus can come down onto the lead-in groove.     Check the lead-out operation, simultaneously. After the B-arm is led out, the A-am operation begins, the A-arm returns to its reset position.     Confirm 1.2 above in 17 cm disk as well.	Set the sensitivity selector switch to M.     Set a 30cm disk.     Set a 17cm disk after the above 30cm disk adjustment.
19	DD motor speed adjustment to 33rpm	Motor revolution speed	eVR1 S-0206	Adjust the motor speed so that a strobo pattern of 33rpm appears to be stopped. (only adjustment in the normal direction.)	Remove motor frame and place it as shown in Fig. 4-3 on page 6.     Put the strobo pattern center at the disk
20	DD motor speed adjustment to 45rpm	Motor revolution speed	eVR2 S-0206	Adjust the motor speed so that a strobo pattern of 45rpm appears to be stopped.	center and fix the pattern by a double- adhesive tape.  3. Remove the 6-lead parallel cord from board S-0206 as shown and then connect
	DD motor	Mhite SE	S2   1   1   1   1   1   1   1   1   1	eVR <sub>1</sub> 33 speed  eVR <sub>2</sub> 45 speed  S/S  EVR <sub>3</sub> S/S  eVR <sub>3</sub> S/S  EVR <sub>3</sub>	the +15V lead and the GND lead to 15V terminal and GND terminal of the 6-pin connector, respectively.  4. Connect a resistor to 6-pin connector as shown.  5. The motor speed can be selected as shown in the Table by switching the circuit.  Note) There exists a set where apertures are formed in board F-O206 on the back side of eVR1 and eVR2.  In the set of this type, it is possible to adjust the motor speed after setting a 30cm disk and mounting a strobo pattern on the disk, without removing the motor frame.

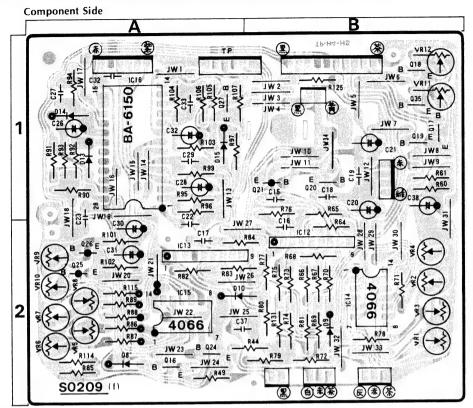
# 5. PARTS LOCATION & PARTS LIST

# 5-1. S-0208 Micro Computor Circuit Board (Stock No. 13271101)



Parts No.	Stock No.	Description	Parts No.	Stock No.	Description	Parts No.	Stock No.	Description
Transisto			fIC3	48003200	MB74LS373	fXO1	46925800	Quartz Element
fQ1	46719900	DTC124	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	or 48053800	HD74LS373			KBR-4.19M
fQ2	46719900	DTC124		or 48053900	M74LS373P			
fQ3	46719800	DTA124	fIC4	03604100	TC4011P	<ul><li>Diode</li></ul>		
fQ4	46719900	DTC124		or 07207200	MB84011BM	fD1	03117600	1S2473T77
fQ5	46719900	DTC124		or 46427200	μPD4011BC	fD2	03117600	1S2473T77
fQ6	46719900	DTC124	fIC6	46160200	MB74LS09	fD3	03117600	1S2473T77
fQ7	46719900	DTC124		or 46160300	M74LS09	fD4	03117600	1S2473T77
fQ8	46719800	DTA124		or 48053700	HD74LS09	fD5	03117600	1S2473T77
fQ9	46614001	2SA1283	fIC7	46160200	MB74LS09	fD6	03117600	1S2473T77
, Q0	or 48000801	2SA934		or 46160300	M74LS09	fD7	03117600	1S2473T77
fQ10	46614001	2SA1283		or 48053700	HD74LS09	fD16	03117600	1S2473T77
1010	or 48000801	2SA934	fIC8	03610500	TC4001BP	fD17	03117600	1S2473T77
fQ11	46614101	2SC3243		or 07186600	MB84001BM	fD18	03117600	1S2473T77
1011	or 48000901	2SC2060		or 46443800	μPD4001BC	fD19	03117600	1S2473T77
fQ12	46719900	DTC124		or 48050000	MSM4001BRS	fD20	03117600	1S2473T77
fQ13	46719800	DTA124	fIC9	07224800	TC4066BP	fD22	03117600	1S2473T77
fQ14	46614001	2SA1283		or 07264600	MSM4066RS	fD23	03117600	1S2473T77
1017	or 48000801	2SA934		or 46164300	MB84066B	fD24	03117600	1S2473T77
fQ15	46614101	2SC3243		or 46421000	μPD4066BC			
1015	or 48000901	2SC2060	fIC10	03604100	TC4011P	fQ29	03900100	Photo Transistor,
fQ23	46719800	DTA124		or 07207200	MB84011BM			PH101
fQ32	46719800	DTA124		or 46427200	μPD4011BC			
fQ33	46540801	2SC2878	fIC11	03610500	TC4001BP	fEP1	07244900	Buzzer PKM12
1 200	or 46604301	2SC3327		or 07186600	MB84001BM			
fQ34	46540801	2SC2878		or 46443800	μPD4001BC	•LED		
1 007	or 46604301	2SC3327		or 48050000	MSM4001BRS	gLD1	46162500	SLR54URC5
fQ36	46719900	DTC124	fIC17	07107500	TC4013BP	gLD2	46162500	SLR54URC5
fQ37	46719800	DTA124		or 07207300	MB84013BM	gLD3	46162500	SLR54URC5
1007	40710000	DITTLE		or 48050200	MSM4013BRS			
•IC				or 48053600	μPD4013BC			
fIC1	46938600	MB88421-130	fIC18	07224800	TC4066BP			
fIC2	48003200	MB74L373	11010	or 07264600	MSM4066RS			
	or 48053800	HD74LS373		or 46164300	MB84066B			
	or 48053900	M74LS373P		or 46421000	μPD4066BC			

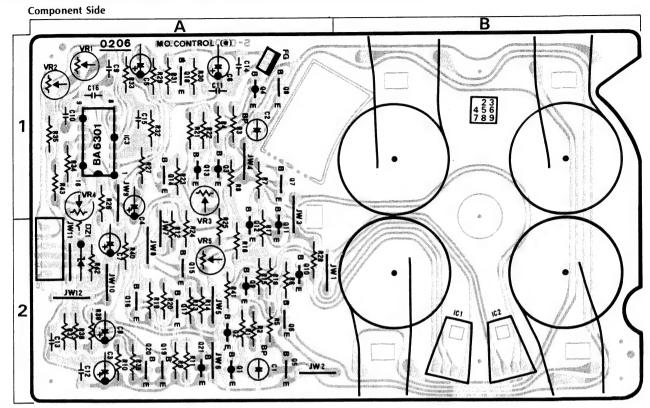
# 5-2. S-0209 Tone Arm Control Circuit Board (Stock No. 13271201)



<b>Parts</b>	1 161

Parts List					
Parts No.	Stock No.	Description	Parts No.	Stock No.	Description
Transistor			fD13	03117600	1S2473T77
fQ16	46719900	DTC124	fD14	03117600	1S2473T77
fQ17	46719900	DTC124	fD15	03117600	1S2473T77
fQ18	46719900	DTC124			
fQ19	46719900	DTC124	fC26	46407600	22μF 25V E.C.
fQ20	03083901	2SD313AL	fC27	46284100	$0.1\mu F$ 50V F.C.
fQ21	03032301	2SB507V11AL	fC29	46282400	3300pF 50V F.C.
fQ24	46719900	DTC124	fC33	46282600	4700pF 50V F.C.
fQ25	46719800	DTA124	fC39	00305600	22μF 25V E.B.
fQ26	46719800	DTA124			
fQ27	46719900	DTC124	fVR1	46634100	4.7kΩ S.V.R., A Arm Servo Adjust
fQ35	46719900	DTC124		or 46918600	5kΩB S.V.R., A Arm Servo Adjust
1000	40710000	0,0,2,	fVR2	46634500	22kΩ S.V.R., A Arm Interrupter
•IC				or 46918800	20kΩB S.V.R., A Arm Interrupter
fIC12	46087100	NJM4558S	fVR3	46634100	4.7kΩ S.V.R., B Arm Servo Adjust
110.12	or 46146500	BA715		or 46918600	5kΩB S.V.R., B Arm Servo Adjust
	or 46147700	M5218L	fVR4	46634500	22kΩ S.V.R., B Arm Interrupter
fIC13	46087100	NJM4558S		or 46918800	20kΩB S.V.R., B Arm Interrupter
11013	or 46146500	BA715	fVR5	46635100	220kΩ S.V.R., A Arm E Sensor
	or 46147700	M5218L		or 46919200	200kΩB S.V.R., A Arm E Sensor
fIC14	07224800	TC4066BP	fVR6	46635100	220kΩ S.V.R., A Arm F Sensor
110 14	or 07264600	MSM4066RS	.,	or 46919200	200kΩB S.V.R., A Arm F Sensor
	or 46164300	MB84066B	fVR7	46635100	220kΩ S.V.R., B Arm E Sensor
	or 46421000	μPD4066BC		or 46919200	200kΩB S.V.R., B Arm E Sensor
£101E	07224800	TC4066BP	fVR8	46635100	220kΩ S.V.R., B Arm F Sensor
fIC15	or 07264600	MSM4066RS	17118	or 46919200	200kΩB S.V.R., B Arm F Sensor
	or 46164300	MB84066B	fVR9	46635300	470kΩ S.V.R., A Arm Delay
		μPD4066BC	17113	or 46919400	500kΩB S.V.R., A Arm Delay
(1010	or 46421000	µРD4000ВС ВА6150	fVR10	46635300	470kΩ S.V.R., B Arm Delay
fIC16	46321300	BAOTSU	171110	or 46919400	500kΩB S.V.R., B Arm Delay
			fVR11	46634700	47kΩ S.V.R., A Arm Lead-in
• Diode	00117000	100470777	171111	or 46919000	50kΩB S.V.R., A Arm Lead-in
fD8	03117600	182473T77	fVR12	46634700	47kΩ S.V.R., B Arm Lead-in
fD9	03117600	1S2473T77	IVNIZ	or 46919000	50kΩB S.V.R.M B Arm Lead-in
fD10	03117600	1S2473T77		01 409 19000	JUNATU S. V.III.IVI B AIIII Eedd III

# 5-3. S-0206 Motor Control Circuit Board (with DD Motor for Disk Drive)

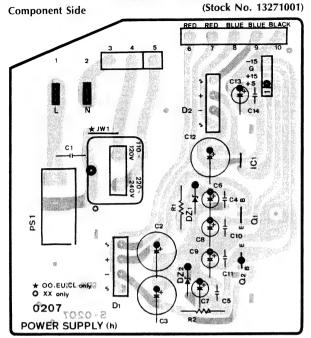


n.	rts	113	-4
Гα	rts		IJι

Parts No.	Stock No.	Description	
Transistor			
eQ1	46359701	2SA952	
eQ2	46359701	2SA952	
eQ3	46359701	2SA952	
eQ4	46359701	2SA952	
eQ5	46359801	2SC2001	
eQ6	46359801	2SC2001	
eQ7	46359801	2SC2001	
eQ8	46359801	2SC2001	
eQ9	46367001	2SA1115	
	or 46367201	2SA1048	
	or 46392001	2SA1175	
eQ10	46367001	2SA1115	
	or 46367201	2SA1048	
	or 46392001	2SA1175	
eQ11	46367001	2SA1115	
	or 46367201	2SA1048	
	or 46392001	2SA1175	
eQ12	46367001	2SA1115	
	or 46367201	2SA1048	
	or 46392001	2SA1175	
eQ13	46367001	2SA1115	
	or 46367201	2SA1048	
	or 46392001	2SA1175	
eQ14	46367101	2SC2603	
	or 46367301	2SC2458	
	or 46391901	2SC2785	
eQ15	46367101	2SC2603	
	or 46367301	2SC2458	
	or 46391901	2SC2785	
eQ16	46367101	2SC2603	
	or 46367301	2SC2458	
	or 46391901	2SC2785	
eQ17	46367101	2SC2603	
	or 46367301	2SC2458	
	or 46391901	2SC2785	

Parts No.	Stock No.	Description
eQ18	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
eQ19	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
eQ20	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
eQ21	46614001	2SA1283
•1C		
elC1	46354301	HW-301C-Q
0.0.	or 46354302	HW-301C-R
elC2	46354301	HW-301C-Q
0.02	or 46354302	HW-301C-R
eIC3	46354400	BA6301
•Zener Diode		
eDZ1	46113900	05Z12-Y
eR43	48056500	270 <b>Ω</b> 1/4W C.R.
.01	46925400	25V 22µF E.B.
eC1 eC2	46925400	25V 22μF E.B. 25V 22μF E.B.
	46283100	0.015µF 50V F.C.
eC9		0.015μF 30V F.C. 0.01μF 50V F.C.
eC10	46282900	6800pF 50V F.C.
eC11	46282700	6800pr 50V F.C.
eVR1	46739000	100kΩ S.V.R., 33rpm speed
eVR2	46635300	470kΩ S.V.R., 45rpm speed
	or 46919400	$500$ k $\Omega$ B S.V.R., 45rpm speed
eVR3	46634700	$47k\Omega$ S.V.R., Wow & flutter
	or 46919000	50kΩB S.V.R., Wow & flutter
eVR5	46633700	1kΩB S.V.R., Wow & flutter
	or 46918300	1k $\Omega$ B S.V.R., Wow & flutter

## 5-4. S-0207 Power Supply Circuit Board

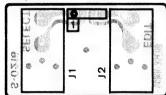


#### Parts List

Parts No.	Stock No.	Description	
•Transistor ⚠ hQ1 ⚠ hQ2	03083901 46149301	2SD313AL 2SB744	
•IC ⚠ hIC1 ⚠	46720300 or 48053500	μPC7805H NJM7805	
● <b>Diode</b> ⚠ hD1 ⚠ hD2	03117000 03117000	RB-152 RB-152	
•Zener Dioc hDZ1 hDZ2	46104300 46104300	05Z15-Y 05Z15-Y	
<u></u> Λ. hC1	46425800 or 46943200	0.01μF 400V C.C. 0.01μF 400V C.C.	
⚠ hSW1	46413900	Push SW., POWER	
⚠ hR1 ⚠ hR2	00136000 00136000	560Ω 1/2W N.I.R. 560Ω 1/2W N.I.R.	

## 5-5. S-0216 COMPU EDIT/SELECTOR Circuit Board

#### **Component Side**

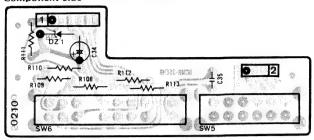


Parts List

Parts No.	Stock No.	Description
J1	46547200	COMPU EDIT Jack
J2	46547200	COMPU SELECTOR Jack

## 5-6. S-0210 Sensitivity Switch Circuit Board

Component Side

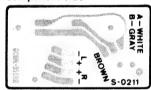


#### Parts List

Parts No.	Stock No.	Description
•Zener Diode fDZ1	46103100	05Z10-Y
fC35	46701700	0.22µF 50V F.C.
gSW6 gSW7	46935810 46935900	Slide SW., Speed Adjust Slide SW., Sensitivity Adjust

# 5-7. S-0211 A Arm Servo Sensor Circuit Board

**Component Side** 



Parts List

Parts No.	Stock No.	Description
fQ30	46938400	Photo Interrupter ON1128
fQ31	46938400	Photo Interrupter ON1128

## 5-8. S-0215 30cm Disk Sensor Circuit Board

Component Side



#### **Parts List**

Stock No.	Description
07205900	LD261

### 5-9. S-0217 Pulse Sensor Circuit Board

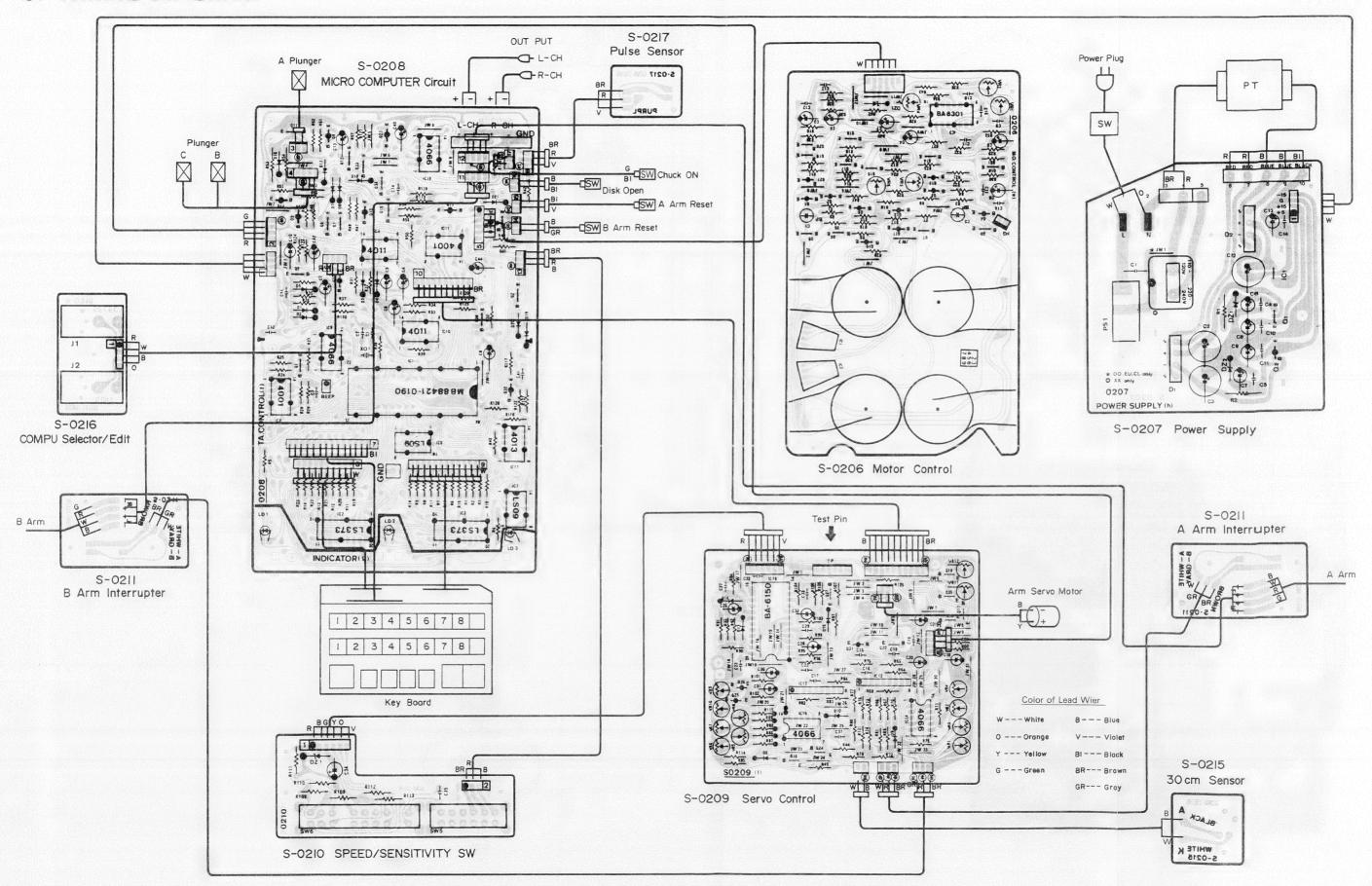
Component Side



### Parts List

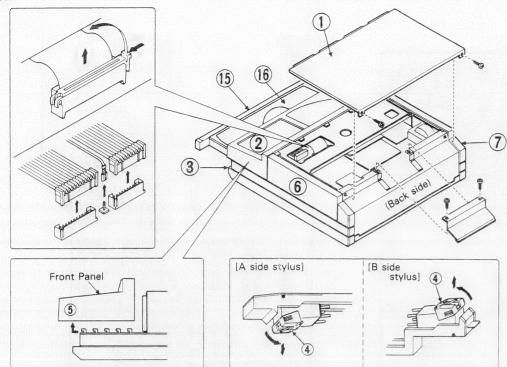
Parts No.	Stock No.	Description
fQ28	46603900	Photo Interrupter GP-1S03

# 6. WIRING DIAGRAM

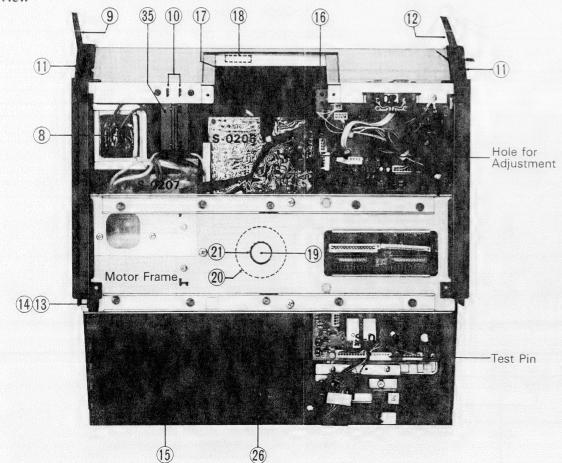


# 7. OTHER PARTS

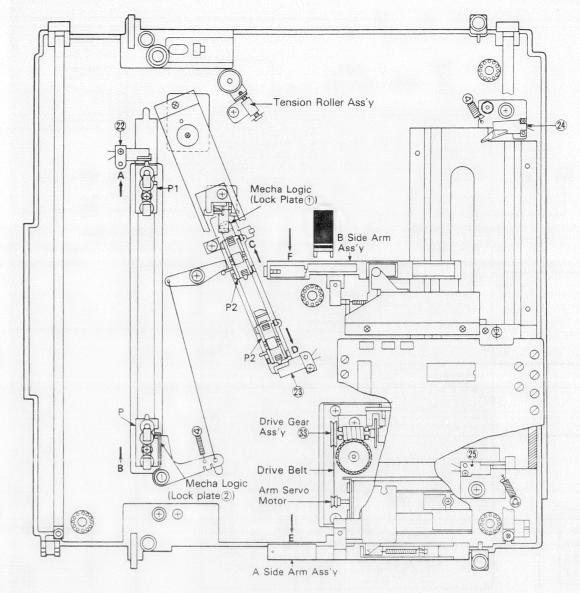
# 7-1. Front View



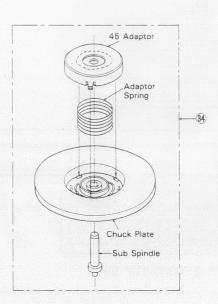
# 7-2. Top View



# 7-3. Top View of Main Chassis

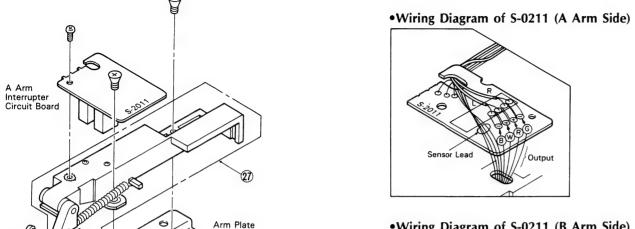


7-4. Chuck Plate

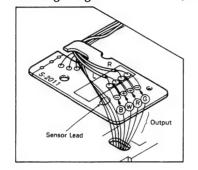


# 7-5. A Side Arm Ass'y & Lifter Ass'y

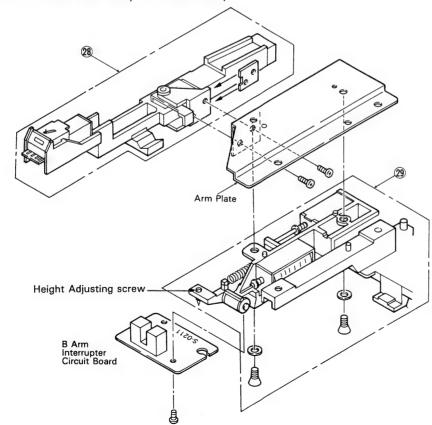
Height Adjusting screw



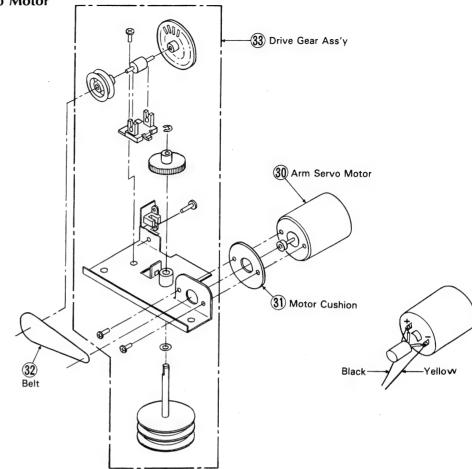
# •Wiring Diagram of S-0211 (B Arm Side)



7-6. B Side Arm Ass'y & Lifter Ass'y



7-7. Arm Servo Motor



Parts List

Parts No.	Stock No.	Description
1	13286410	Top Plate (Silver Model)
	13290010	Top Plate (Black Model)
2	13284610	Key Board Ass'y (Silver Model) < XX,CSA,EU,BS,AS >
	13294810	Key Board Ass'y (Black Model) < XX,CSA,EU,BS,AS >
	13310400	Key Board Ass'y (Silver Model) < UL>
	13310500	Key Board Ass'y (Black Model) < UL>
3	13273800	Front Cover
4	13303300	Stylus SN-909, for A arm and B arm
5	13273910	Front Panel Ass'y (Silver Model) < XX,CSA,EU,BS,AS >
	13294510	Front Panel Ass'y (Black Model) < XX,CSA,EU,BS,AS >
	13310600	Front Panel Ass'y (Silver Model) <ul></ul>
	13310700	Front Panel Ass'y (Black Model) < UL>
6	13273700	Side Panel, right side (Silver Model
	13291200	Side Panel, right side (Black Model
7	13273600	Side Panel, left side (Silver Model)
	13291100	Side Panel, left side (Black Model)
<b>∆</b> 8	15014901	Power Transformer < XX>
$\triangle$	15014902	Power Transformer < UL, CSA >
$\triangle$	15014905	Power Transformer < EU, BS, AS >
<b>∆</b> 9	46413200	Power Supply Cord <xx,csa></xx,csa>
$\triangle$	38004700	Power Supply Cord <ul></ul>
A 8 A 9 A 4 A 4	38004500	Power Supply Cord <eu></eu>
$\triangle$	38004300	Power Supply Cord <bs></bs>
$\Delta$	07204200	Power Supply Cord <as></as>

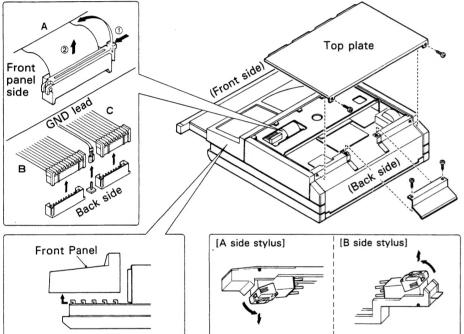
Parts No.	Stock No.	Description
<b>∆</b> 10	46941300	Switch for Power Supply
11	13278800	Cord Cover
12	13234400	Output Cord with Pin Plug <xx,csa,eu,bs,as></xx,csa,eu,bs,as>
	13234500	Output Cord with Pin Plug <ul></ul>
<b>1</b> 3 <b>1</b> 3 <b>1</b> 3	46413900	POWER Switch
14	13280900	Knob, POWER Switch
15	18096500	Disk Base Ass'y (Silver Model)
	18096400	Disk Base Ass'y (Black Model)
16	18096700	Disk Plate Ass'y (Silver Model)
	18096600	Disk Plate Ass'y (Black Model)
17	13274000	Pick-up Brush A
18	13274100	Pick-up Brush B
19	18083900	DD Motor for Disk Drive
00	10000000	(with S-0260)
20	13260300	T.T. Sheet
21	13260400	Lock Bush
22	46926900	Micro Switch, disk open
23	46926900	Micro Switch, chuck ON
24	46925200	Micro Switch, B arm reset
25	46925200	Micro Switch, A arm reset
26	18095700	A Side Arm Ass'y A Side Lifter Ass'y with Plunger A
27	13284410	, ,
28	18095400	B Side Arm Ass'y
29	13284510	B Side Lifter Ass'y with Plunger B,C
30	46935700	Arm Servo Motor
31	13288900	Motor Cushion
32	13281100	Drive Belt
33 34	18085600	Drive Gear Ass'y Chuck Plate Ass'y
	18086300	,
35	13289100	Switch Case
36	13266700	Wire Stopper (L plate) (Refer Fig. 8-6 on page 16)

# 8. HOW TO REPLACE MAIN PARTS

#### A. Front panel and Stylus

- 1) Depress OPEN key to take out the disk base. Turn off the power supply by depressing the POWER switch when the disk base comes out about 10cm. Remove two 3 × 8 black screws from the back side, and the top plate.
- 2) Carefully extract the A-surface stylus holder in the arrow direction as shown while holding the cartridge by the hand. Mount a new stylus by carefully pushing it in the opposite direction. Take care not to touch the finger to the stylus tip.
- 3) Mount the top plate and turn on the power supply. Then, turn off the power supply the moment the A-arm comes near the front panel window.
- 4) Disconnect three connectors A, B, C and GND lead.
- 5) Carefully pull the front panel toward you and remove the right- and left-side stoppers, separately. Take care that the connector is not caught by other parts.
- 6) In the same way as in the A-surface stylus holder, carefully extract the B-surface stylus holder in the arrow direction as shown while holding the cartridge by the hand. Take care not to touch the finger to the stylus tip.
- 7) Fit the front panel to the right- and left-side stoppers and then connect the connectors A, B, C and the GND lead. In doing this, take care that the power switch is not brought into contact with the under surface of the panel. Further, in fitting the connector, do not apply an excessive force to the board.
- 8) Fix the rear side cover and the top plate by two screws, respectively.
- 9) Check that the disk base is automatically pulled in when the power switch is turned on.

#### Fig. 8-1



#### 1. Interlock switch

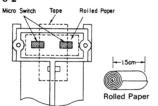
When the top plate is removed, the interlock switch is automatically opened. Therefore no power supply is applied to the set even if the main switch is turned on. In the case where the power supply is required to be turned on in replacing some parts such as the string, take the following procedure:

1) Remove two  $3 \times 8$  screws for fixing the

- interlock switch.

  2) Push the interlock switches by a rolled
- paper as shown and fix the paper by an adhesive tape to turn on them.

Fig. 8-2

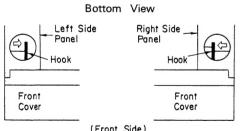


2. Keyboard-only operation

When the front panel is removed, the set will not be operated. In the case the set is required to operate, remove the key board from the front panel and then plug the connector

#### B. Front cover (See Fig. 8-3)

1) Unhook the front cover through the apeatures formed on this side of the right- and left-side panel and then extract the front cover toward you.



#### C. How to remove keyboard

- 1) Remove the top plate and front panel.
- 2) Remove two 3 × 8 screws for fixing the keyboard to the front panel.

# D. How to remove side panels (See Fig. 8-4)

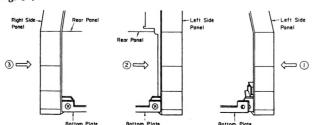
- 1) Remove the top plate, front panel and front cover.
- 2) Remove two 3×8 screws for fixing the side panels and top plate.

- 3) Extract the right- and left-side panels.
- 4) Remove the rear panel.

# E. How to install side panels (See Fig. 8-4)

- 1) Fit the left-side panel to the bottom plate. (1)
- 2) Fit the back-side panel to the left-side panel and then fix it with the  $3 \times 8$  screws. (2)
- 3) Fit the right-side panel to the bottom plate and the back-side panel and then fix it with the  $3 \times 8$  screws. (3)
- 4) Fit the front cover to the right- and left-side panels.

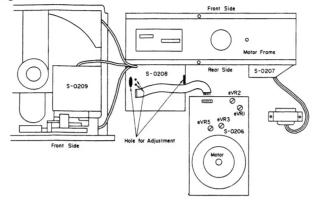
Fig. 8-4



#### F. How to remove disk driving DD motor with control board

- 1) Remove the top plate, front panel, front cover, right- and left-side panels, and back-side panel.
- 2) Remove four 4 x 8 binding screws for fixing the motor frame.
- 3) Place the removed motor frame on the right hand of the set with it set front-side hack
- 4) Remove three 4 x 12 screws for mounting the motor.

Fig. 8-5



## G. How to remove A-arm assembly and lifter assembly (See page 15)

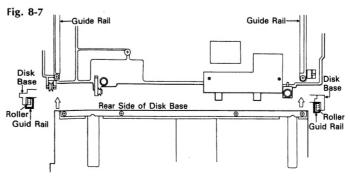
- Remove the top plate and front panel.
- 2) Disconnect the lead extending from the arm of board S-0211.
- 3) Remove a 2×4 binding screw for mounting board S-0211.
- 4) Remove two 2 x 4 flat-head screws for fixing the lifter assembly.

### H. How to remove B-arm assembly and lifter assembly (See page 15)

- Remove the top plate, front panel, front cover, right- and left-side panels, back-side panel, and motor frame.
- 2) Set the B-arm at its reset position by pulling the table disk to its extreme end. (Turn on OPEN key and then off when the disk base is pulled out extremely.)
- 3) Remove the B-arm stylus.
- 4) Remove two 3 x 8 screws fixing the arm plate.
- 5) Perform the same procedure from (2) to (4) stated in item G above.

## I. How to remove disk base and disk plate (See Fig. 8-7)

Lock Screw Arm Brush Disk Plate Disk Plate Lock Screw

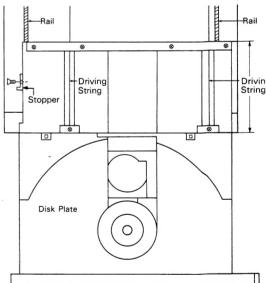


- 1) Remove the top plate, front panel, front cover, right- and left-side panels, and back-side panel.
- 2) Pull the disk base table toward you to its extreme front end by depressing OPEN key.
- 3) Loosen screws for fixing mechanism-driving strings to the disk table. Remove the metal fixture from the string. (Take care not to remove the fixture from the string by excessively lossening the screw.)
- 4) Remove a 3 × 8 fixture screw positioned on the left side of the disk
- 5) Extract the disk base together with the disk plate.

#### I. How to install disk base and disk plate (See Figs. 8-6, 8-7, and 8-8)

- Depress OPEN key to move the movable pulley P<sub>1</sub> to position A, the movable pulley P2 to position C and the A and B-arms to positions E and F, respectively.
- 2) Fit the disk plate onto the disk base.
- 3) Mount the disk plate onto the rail and then push it about 10cm. Fix the disk plate with a metal fixture located at the left end of the
- 4) Pull the disk plate to its extreme front end and then hang two right and left strings on the string fixing fixture located on the plate end
- 5) By depressing OPEN/CLOSE key, push the disk table to its extreme rear position by the hand, when the movable pully P<sub>1</sub> moves from position A to position B, as shown in Fig. 7-3 on page 14.
- Push the disk plate to a position where the disk plate is tightly in contact with the rear portion of the disk base.
- 7) Tighten two string fixing screws. The string drives the mechanism of the disk plate.
- 8) Be sure that the disk base and disk plate move normally by depressing OPEN/CLOSE kev.

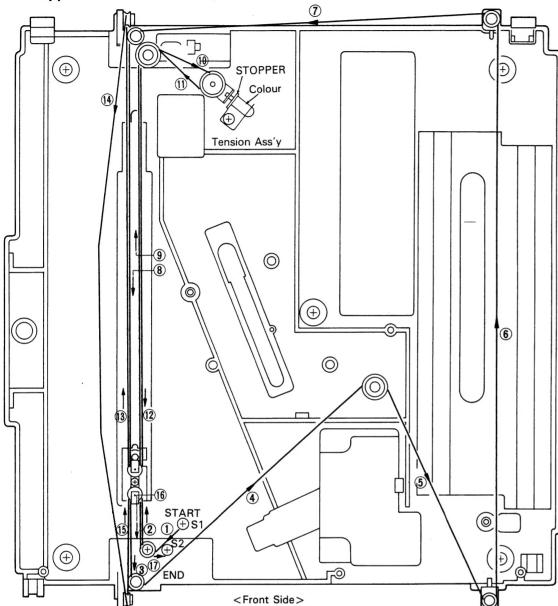
Fig. 8-8



# K. How to remove drive gear assembly and arm servomotor (See Fig. 7-7 on page 15)

- 1) Set the A-arm at it extreme rear position. (Turn on OPEN Key and turn off the main switch when the A-arm reach es the extreme rear end position.)
- 2) Remove the top plate, front panel, front cover, right- and left-side panels and the rear panel.
- 3) Remove the disk plate and disk base.
- Remove screws for mounting the arm servomotor.
- 5) Remove screws for mounting the drive gear assembly.

# 9. HOW TO REPLACE MECHANISM DRIVING STRING (On the upper side of main chassis)



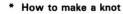
### • Replacement procedure

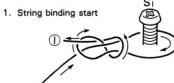
- 1. Remove the top plate, front panel, side plates and rear panel.
- 2. Remove the motor frame.
- 3. Remove the disk table and disk plate.
- 4. Make a knot around the screw  $S_1$ , stretch the string in accordance with procedure from 1 to 17, and tie up the string end around the screw S2.
- 5. After having assembled the set completely, turn on the main switch to make sure that the disk table and disk plate opens or closes normally and that the normal music reproduction can be made.

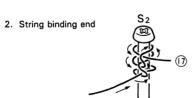
Note) Adjust the tension of the streched string by the use of the adjusting screw of the tension assemble so that the collar is brought into contact with the stopper as shown above.

Parts List

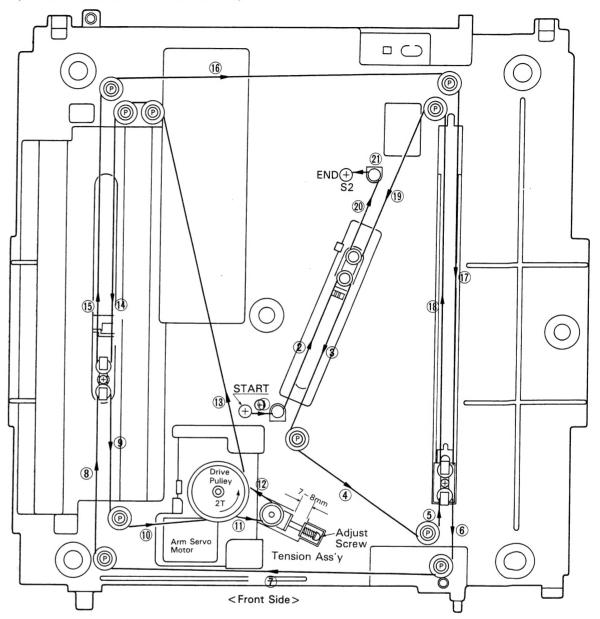
Parts No.	Stock No.	Description	
1	60360530	Driving String (3m)	
2	13303500	Tension Roller Ass'y	







# 10. HOW TO REPLACE MECHANISM DRIVING STRING (On the back side of main chassis)



## •Replacement procedure

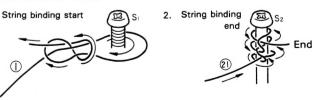
- 1. Remove the top plate, front panel, side plates and rear panel.
- 2. Remove the motor frame.
- 3. Remove the disk table and disk plate.
- 4. Remove four screws for fixing the main chassis, and then turn the main chassis upside down.
- 5. Make a knot around the screw S1, stretch the string in acordance with procedure from 1 to 21, and tie up the string end around the screw S2.
- 6. After having assembled the set completely, turn on the main switch to make sure that the disk table and disk plate opens or closes normally and that the normal music reproduction can be made.

Note) Adjust the tension of the stretched string by the use of the adjusting screw of the tension assembly as shown above.

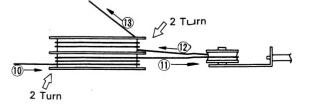
#### Parte List

larts List			
Parts No.	Stock No.	Description	
1	60360530	Driving String (3m)	
2	07600910	Tension Ass'y	

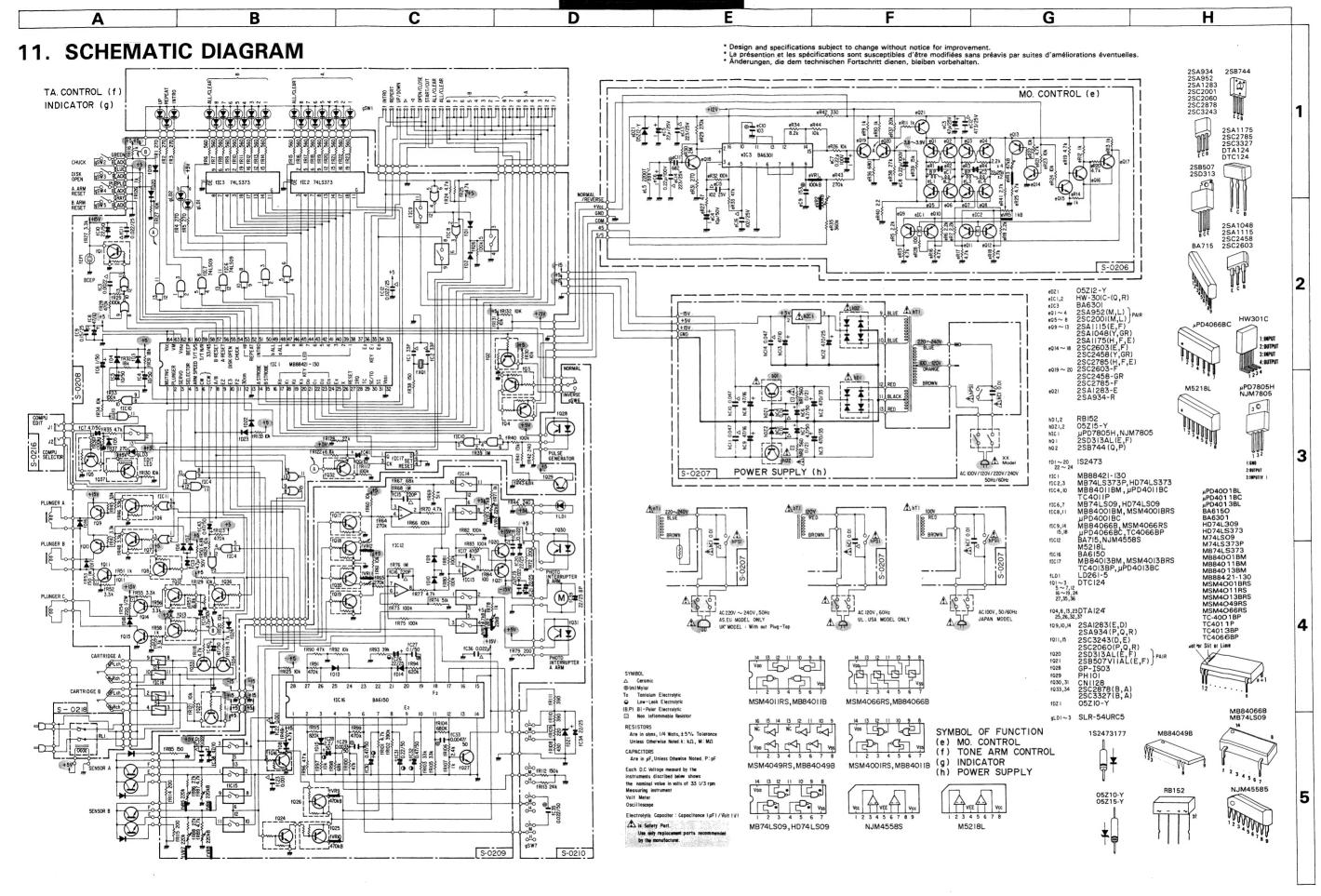
\* How to make a knot



\* How to bind the string around drive pully

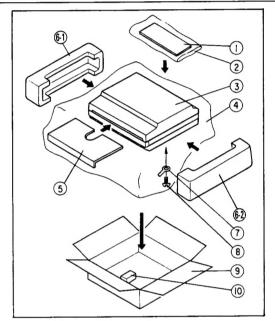


17



# 12. PACKING LIST

Parts No.	Stock No.	Description
1		Accessories (Sound Absober)
2		Polyethlen Bag
3		Turntable
4	91122710	Vinyl Bag
5	13285400	Corrugated Board
6-1	13287710	Styrofoam Packing (Left side)
6-2	13287810	Styrofoam Packing (Right side)
7		Tag
8	00423400	Transit Screw, 4×16 Binding
9	13262800	Carton Case (Silver Model)
	13294700	Carton Case (Black Model)
10		Bottom Packing



# 13. ACCESSORY LIST

Stock No.	Description
46267300	2P Plug Cord
46798100	Operating Instruction
Accessories	(Sound Absober)
(13308100	Wooden Board (Front Side)
13308000	Wooden Board (Rear Side)
13307900	Pipe
13145100	Insulator